

**VideoBloX**  
**Matrix Switcher Chassis Only**

**User Manual**

## History

Issue	Date	Revisions
Document 900.0855		
1.0	October 2006	Initial Release

# Contents

<b>Compliances and Safeguards</b>	<b>3</b>
FCC COMPLIANCE STATEMENT	3
CANADIAN COMPLIANCE STATEMENT	3
EUROPEAN COMPLIANCE STATEMENT	4
IMPORTANT SAFEGUARDS	4
EXPLANATION OF GRAPHICAL SYMBOLS	6
<b>1 INTRODUCTION</b>	<b>1</b>
PRODUCT DESCRIPTION	1
FEATURES	2
SYSTEM OVERVIEW	2
RACK MOUNT SYSTEM CHASSIS	3
REMOVING A MODULE FROM A VIDEOBLOX CHASSIS	4
INSTALLING A MODULE IN A VIDEOBLOX CHASSIS	5
<b>2 REAR CHASSIS</b>	<b>7</b>
POWER SUPPLY MODULE	7
4U, 8U, 12U Chassis	7
2U Chassis	8
Main Input Power Connection	9
Low Voltage Input Connection	9
Chassis Sync In	9
CHASSIS EXPANSION DRIVER BOARD, HVBCE	10
Control Expansion Connector	10
Communications Expansion Connector	10
Control Expansion and Communication Connector Pin-Outs	11
CONNECTING MULTIPLE CHASSIS	12
Two Chassis	12
Three Chassis	13
DIP SWITCH SETTINGS	14
RESET PUSH BUTTON	15
SYNC PHASE ADJUSTMENT	15
LED INDICATIONS	16
<b>3 VIDEO INPUT MODULES</b>	<b>17</b>
DESCRIPTION	17
CROSS LINK VIDEO INPUT MODULES	19
VideoBloX Switching System with 128 Video Outputs (2 chassis)	20
VideoBloX Switching System with 192 Video Outputs (3 Chassis)	21
DIP SWITCH SETTINGS	22
HVB16M16	22
HVB16M32 and HVB16M64	23
LED INDICATIONS	25
ADJUSTMENTS	25

	Video Input Gain Setting . . . . .	25
	Termination . . . . .	26
	FUSES . . . . .	26
<b>4</b>	<b>VIDEO OUTPUT MODULES . . . . .</b>	<b>27</b>
	DESCRIPTION . . . . .	27
	DIP SWITCH SETTINGS . . . . .	28
	VIDEO OUTPUT GAIN ADJUSTMENT . . . . .	28
	OUTPUT RANGES . . . . .	28
<b>5</b>	<b>TITLED VIDEO OUTPUT MODULE . . . . .</b>	<b>29</b>
	DESCRIPTION . . . . .	29
	DIP SWITCH SETTINGS . . . . .	30
	VIDEO OUTPUT GAIN ADJUSTMENT . . . . .	31
	RESTORING FACTORY DEFAULTS . . . . .	32
	DAUGHTER BOARD SETUP . . . . .	33
	MODULE BOARD SETTING, VIDEO OUTPUTS 1-64 . . . . .	33
	MODULE BOARD SETTING, VIDEO OUTPUTS 1-16 . . . . .	34
	MODULE BOARD SETTING, VIDEO OUTPUTS 17-32 . . . . .	34
	MODULE BOARD SETTING, VIDEO OUTPUTS 33-48 . . . . .	35
	MODULE BOARD SETTING, VIDEO OUTPUTS 49-64 . . . . .	35
<b>6</b>	<b>AUDIO INPUT MODULE . . . . .</b>	<b>37</b>
	DESCRIPTION . . . . .	37
	DIP SWITCH SETTINGS . . . . .	38
	CONFIGURATION JUMPERS . . . . .	39
	Phantom Power Jumpers and 20dB Pad Jumpers . . . . .	39
	Low Pass and High Pass Filter Jumpers . . . . .	39
	Gain Adjustment . . . . .	40
	CMRR Adjustment . . . . .	40
	CONNECTING A MICROPHONE TO THE AUDIO INPUT MODULE . . . . .	41
<b>7</b>	<b>AUDIO OUTPUT MODULE . . . . .</b>	<b>43</b>
	DESCRIPTION . . . . .	43
<b>8</b>	<b>CHASSIS INTERLINK INPUT AND OUTPUT MODULE . . . . .</b>	<b>45</b>
	DESCRIPTION . . . . .	45
	DIP SWITCH SETTINGS . . . . .	47
	CONNECTIONS, HVB32RJ45X8 . . . . .	49
<b>Appendix A</b>	<b>BINARY ADDRESS VALUES . . . . .</b>	<b>51</b>
<b>Appendix B</b>	<b>CONNECTING TO MAXPRO-Net SERVER . . . . .</b>	<b>53</b>
	INTRODUCTION . . . . .	53
	CONNECTIONS . . . . .	53
	DIP Switch Settings. . . . .	54
	VideoBloX Chassis Power Supply Module . . . . .	54
	HVBMATPIT . . . . .	54
	LED OPERATION . . . . .	55

# Figures

Figure 1-1	VideoBloX Matrix Switcher Front View (HVB12U shown) . . . . .	1
Figure 1-2	VideoBloX Matrix Switcher Rear View (HVB4U shown) . . . . .	3
Figure 1-3	Location of Phillips Screw and Pulling Tool . . . . .	4
Figure 1-4	Removing a Module from the VideoBloX Chassis. . . . .	5
Figure 2-1	Power Supply Module (HVB4U, HVB8U, HVB12U) . . . . .	7
Figure 2-2	Power Supply Module, HVB2U . . . . .	8
Figure 2-3	Connecting Communication Signals between Two Chassis . . . . .	12
Figure 2-4	Connecting Communication Signals between Three Chassis . . . . .	13
Figure 2-5	Chassis DIP Switch Settings . . . . .	14
Figure 2-6	System Reset Push Button . . . . .	15
Figure 2-7	Sync Phase Adjustment . . . . .	15
Figure 3-1	Video Input Modules (2 front panel options) . . . . .	18
Figure 3-2	Video Input Module (Standard - 16 BNC Inputs. . . . .	18
Figure 3-3	Video Input Module (Looping BNC Inputs) . . . . .	18
Figure 3-4	Type A, B and C Cross-Link Looping Input Termination Modules . . . . .	19
Figure 3-5	VideoBloX Matrix Switcher with 128 Video Outputs (2 Chassis) . . . . .	20
Figure 3-6	VideoBloX Matrix Switcher with 192 Video Outputs (3 Chassis) . . . . .	21
Figure 3-7	DIP Switches SW1 - SW3 . . . . .	22
Figure 3-8	Video Input Gain Enable/Disable (SW2) and Termination (SW1). . . . .	25
Figure 3-9	Video Gain Adjustment . . . . .	26
Figure 4-1	8 and 16 Channel Video Output Modules - Front View . . . . .	27
Figure 4-2	8 and 16 Channel Video Output Rear Panel Termination Modules. . . . .	27
Figure 5-1	.Front and Rear Views of Titled Video Output Module . . . . .	29
Figure 5-2	Location of Video Output Daughter Board . . . . .	30
Figure 6-1	Front and Rear Views of Audio Input Module . . . . .	37
Figure 6-2	Phantom Power Jumpers and 20dB Pad Jumpers. . . . .	39
Figure 6-3	Low Pass and High Pass Filter Jumpers . . . . .	39
Figure 6-4	CMRR Adjustment. . . . .	40
Figure 6-5	Connecting a Microphone to an Audio Input . . . . .	41
Figure 7-1	Front and Rear Views of 8 and 16 Channel Audio Output Modules . . . . .	43
Figure 8-1	HVB32LKO Chassis Interlink Output Module with Rear Terminal HVBRJ45X8. . . . .	45
Figure 8-2	HVB32LKI Chassis Interlink Input Module with Rear Terminal HVBRJ45X8 . . . . .	45
Figure 8-3	Jumper JP1 - JP4 Settings . . . . .	46
Figure 8-4	DIP Switch Settings . . . . .	47
Figure 8-5	RJ45 Connections . . . . .	49

Figures

Figure B-1      Connecting Redundant MAXPRO-Net Servers to VideoBloX Matrix Switcher . . . . . 57

Figure B-2      Connecting a Single MAXPRO-Net Server to VideoBloX Matrix Switcher . . . . . 58

# Tables

Table 1-1	VideoBloX Chassis . . . . .	3
Table 2-1	Connector Pin-Outs, Female DB9 . . . . .	11
Table 2-2	DIP Switch Settings . . . . .	14
Table 2-3	Chassis Sync Signal . . . . .	14
Table 2-4	LED Indicators . . . . .	16
Table 3-1	Video Input Modules (Single Chassis) . . . . .	18
Table 3-2	HVB16M16 DIP Switch SW1 Settings . . . . .	22
Table 3-3	HVB16M16 DIP Switch SW2 Settings . . . . .	22
Table 3-4	HVB16M32 and HVB16M64 DIP Switch SW1 Settings. . . . .	23
Table 3-5	HVB16M32 and HVB16M64 DIP Switch SW2 Settings. . . . .	24
Table 3-6	HVB16M32 and HVB16M64 DIP Switch SW3 Settings. . . . .	24
Table 4-1	Video Output Modules . . . . .	27
Table 5-1	Titled Video Output Modules . . . . .	29
Table 5-2	DIP Switch S1 Settings . . . . .	31
Table 6-1	DIP Switch S1 Settings . . . . .	38
Table 6-2	DIP Switch S2 Settings . . . . .	38
Table 8-1	DIP Switch S1 and S2 Settings . . . . .	47
Table 8-2	DIP Switch S3 and S4 Settings . . . . .	48
Table A-1	Binary Address Values . . . . .	51
Table B-1	VideoBloX Chassis DIP Switch S1 Settings . . . . .	54
Table B-2	HVBMATPIT DIP Switch S1 - S3 Settings . . . . .	54





# Compliances and Safeguards

---

## FCC COMPLIANCE STATEMENT

---

INFORMATION TO THE USER: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



---

**Caution** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

---

---

## CANADIAN COMPLIANCE STATEMENT

---

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe B est conforme à la norme NMB-003 du Canada.



---

**Caution** Users of the product are responsible for checking and complying with all federal, state, and local laws and statutes concerning the monitoring and recording of video and audio signals. Honeywell video systems shall not be held responsible for the use of this product in violation of current laws and statutes.

---



---

**Caution** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

---

---

## EUROPEAN COMPLIANCE STATEMENT

---

This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.



---

**Caution** Users of the product are responsible for checking and complying with all federal, state and local laws and statutes concerning the monitoring and recording of video and audio signals. Honeywell Video Systems shall not be held responsible for the use of this product in violation of current laws and statutes.

---

---

## IMPORTANT SAFEGUARDS

---

1. **READ INSTRUCTIONS** - All safety and operating instructions should be read before the unit is operated.
2. **RETAIN INSTRUCTIONS** - The safety and operating instructions should be retained for future reference.
3. **HEED WARNINGS** - All warnings on the unit and in the operating instructions should be adhered to.
4. **FOLLOW INSTRUCTIONS** - All operating and use instructions should be followed.
5. **CLEANING** - Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. **ATTACHMENTS** - Do not use attachments not recommended by the product manufacturer as they may result in the risk of fire, electric shock, or injury to persons.
7. **WATER AND MOISTURE** - Do not use this unit near water or in an unprotected outdoor installation, or any area which is classified as a wet location.
8. **ACCESSORIES** - Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult and serious damage to the equipment. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer. Wall or shelf mounting should follow the manufacturer's instructions and should use a mounting kit approved by the manufacturer.

9. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.
10. VENTILATION - Slots and openings in the cabinet and the back or bottom are provided for ventilation and to ensure reliable operation of the equipment and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. Equipment should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation, such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11. POWER SOURCES - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your product dealer or local power company. For products designed to operate from battery power or other sources, refer to the operating instructions.
12. GROUNDING OR POLARIZATION - The power supply supplied with this unit may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
13. OVERLOADING - Do not overload outlets and extension cords as this can result in a risk of fire or electric shock.
14. POWER-CORD PROTECTION - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the monitor.
15. OBJECT AND LIQUID ENTRY - Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.
16. SERVICING - Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
17. DAMAGE REQUIRING SERVICE - Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:
  - a. When the power-supply cord or plug is damaged.
  - b. If liquid has been spilled, or objects have fallen into the unit.
  - c. If the unit has been exposed to rain or water.
  - d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
  - e. If the unit has been dropped or the enclosure has been damaged.
  - f. When the unit exhibits a distinct change in performance - this indicates a need for service.
18. REPLACEMENT PARTS - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

19. **SAFETY CHECK** - Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.
20. **LIGHTNING AND POWER LINE SURGES** - For added protection of this unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power-line surges.
21. **HEAT** - The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.
22. **INSTALLATION** - Do not install the unit in an extremely hot or humid location, or in a place subject to dust or mechanical vibration. The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.
23. **WALL OR CEILING MOUNTING** - The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

---

## EXPLANATION OF GRAPHICAL SYMBOLS

---



---

**Caution** Caution. The exclamation point within an equilateral triangle advises the user that failure to take or avoid a specified action could result in loss of data or damage to the equipment.

---



---

**WARNING!** **Warning: The exclamation point within an octagon advises users that failure to take or avoid a specified action could result in physical injury to a person or irreversible damage to the equipment.**

---

---

## WARNINGS

---



---

**WARNING!**

To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.

---



---

**WARNING!**

Do not insert any metallic object through the ventilation grills.

---



---

**WARNING!**

This unit must be properly grounded to a good earth ground. Non-observance of this practice may result in a static electricity build-up that may result in an electric shock when external connections are touched.

---



# INTRODUCTION

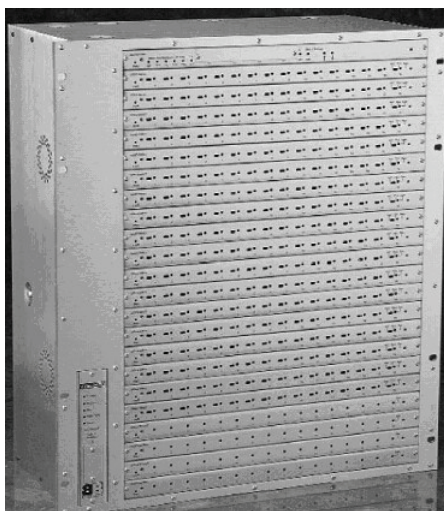
---

## PRODUCT DESCRIPTION

---

VideoBloX is a range of compatible building blocks for use in video surveillance and monitoring systems. An entire system consists of a suitable mix of the following components / modules:

**Figure 1-1 VideoBloX Matrix Switcher Front View (HVB12U shown)**



- Matrix chassis which are supplied complete with built in power supply units. These chassis are available in industry standard 19-inch 2U, 4U, 8U and 12U rack mount enclosures. The 2U chassis is powered by a low voltage power supply, while all other chassis may be powered from low voltage supply or main input power supply.
- Video input modules. These provide protection and signal conditioning for 16 video inputs as well as matrix switching of these inputs. All video inputs to the system are via these modules.
- Video output modules. These provide protection and signal conditioning for up to 16 video outputs. The units are available in 8 channel and 16 channel versions, each of which may optionally include independent video titling on each output.

---

## FEATURES

---

The entire system is based on a modular approach allowing for flexibility in configuring video switching systems to suit a wide variety of applications.

- 4080 video inputs to 2048 video outputs

---

## SYSTEM OVERVIEW

---

The configuration of a video surveillance / monitoring control system is highly dependent on the operational requirements of the system. The modular building block approach allows for different system configurations to be readily set up to suit differing application requirements.

Each system must contain at least one VideoBloX chassis. It is possible to interconnect more than one chassis either at the same location or at different locations with suitable data and video interlinks between the various racks. The form of interlink is dependent on the system type and could be hard wired, fiber optics, radio, microwave or other. If there are a large number of video sources at a location which is remote from the monitoring location, then it is generally more cost effective to distribute the matrix switching system by locating a subchassis at the remote site(s). This principle can be repeated for any number of remote sites.

Generally, all VideoBloX modules have their own on board local power supply units. All signal lines that run to the field are protected against limited over-voltages. Where any processing is required, this is done to the greatest possible extent in a distributed manner, with each module taking care of its own housekeeping. Local supply voltages are monitored and the module will be reset if the supply falls below the minimum threshold. Each module has a DIP switch which is used to set the module address and indications which show the critical system operating parameters (power and communications). A broad range of diagnostics for each module is provided.



## RACK MOUNT SYSTEM CHASSIS

VideoBloX is housed in an industry standard 19" rack mountable chassis. Various chassis heights are available to allow for different sized systems. The number of modules, which may be fitted, is shown in the following table:

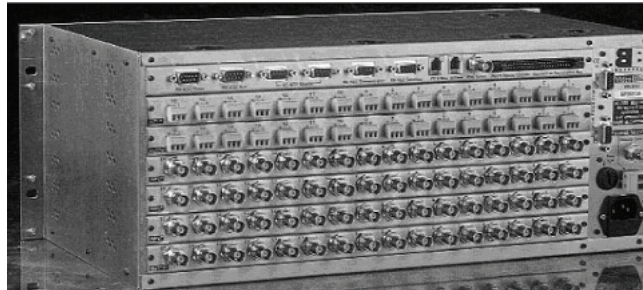
**Table 1-1 VideoBloX Chassis**

Model No.	Chassis Height	Max Modules	Typical size
HVB2U	2U	3	32 into 8
HVB4U	4U	7	80 into 16 or 64 into 32
HVB8U	8U	15	192 into 32 or 160 into 64
HVB12U	12U	23	320 into 32 or 288 into 64

VideoBloX modules are mounted from the front of the chassis. The modules are fitted horizontally to allow for vertical system expansion. All modules (except the power supply module) are position independent. Two thumb screws for removing modules from the chassis are provided with each chassis. Refer to **REMOVING A MODULE FROM A VIDEOBLOX CHASSIS**.

Modules are "hot-swappable" and may be removed and reinserted with the power on. The power supply module is fitted vertically beside the other modules. This module may not be removed with the power switched on and is not position independent.

**Figure 1-2 VideoBloX Matrix Switcher Rear View (HVB4U shown)**



A separate termination card is inserted at the rear of the chassis. Termination cards for BNC input/output, D type connectors, alarm connectors, etc. are available. Although modules are position independent, it is necessary to match the module with the termination card.

All commonly used adjustments are accessible from the front. Adjustments / switch settings which are made once at the time of installation, or when major reconfiguration is carried out, are accessed by removing a module. Refer to **REMOVING A MODULE FROM A VIDEOBLOX CHASSIS**.

The VideoBloX chassis incorporates the following components:

- Backplane: The backplane provides for distribution of power and control signals as well as 64 audio or video (or mixed) signals. The distance between modules is 1/2U.
- Cooling System: VideoBloX is equipped with fans, which provide forced cooling to ensure reliable operation for a fully populated chassis in ambient temperatures up to 104 degrees fahrenheit (40 degrees Celsius). Highly efficient, switch mode power supplies are used throughout, which minimizes the power dissipated internally.
- Termination card mounting slots: Located on the rear of the VideoBloX chassis allowing for different style termination cards to be fitted.
- Module mounting slots: Located on the front of the VideoBloX chassis allowing for insertion of the full range of VideoBloX modules, except the power supply unit.
- Power supply slot: Allowing for insertion of the power supply module accessible from the front of the VideoBloX chassis.

---

## REMOVING A MODULE FROM A VIDEOBLOX CHASSIS

---

The modules are removed from the front of the VideoBloX chassis. Perform the following procedure to remove a module from the VideoBloX chassis.



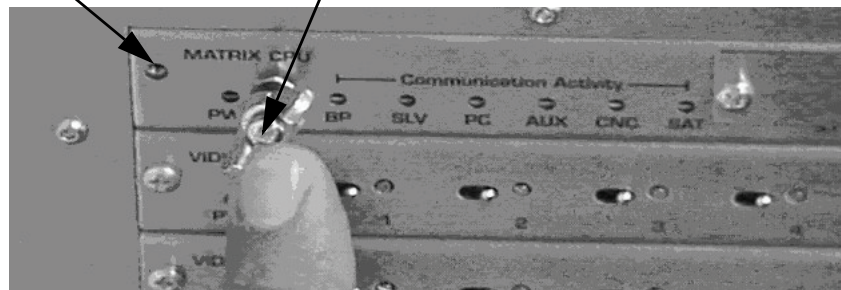
**WARNING!** If removing the power supply module, remove power to the unit. All other cards are hot swappable.

1. Remove the two 3mm Phillips screws on the ends of the module to be removed.
2. Thread the two pulling tools into the inner threaded holes on the module to be removed.

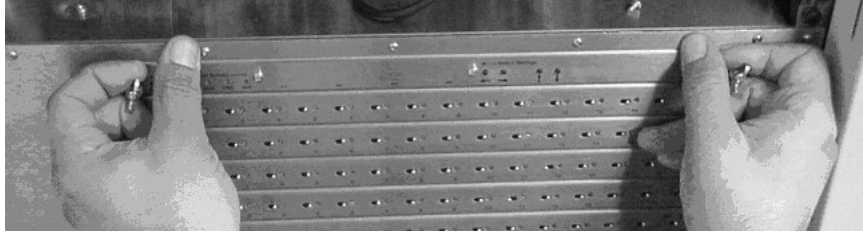
**Figure 1-3 Location of Phillips Screw and Pulling Tool**

2 x 3mm Phillips Screw (removed)

2 x Pulling Tool



3. Pull the module using both hands with thumbs as leverage.

**Figure 1-4 Removing a Module from the VideoBloX Chassis**

---

## INSTALLING A MODULE IN A VIDEOBLOX CHASSIS

---

Perform the following procedure to insert a module in a VideoBloX Chassis.



---

**WARNING!** If installing a CPU or combo CPU module, ensure the power is off. Once installed, connect power.

---

1. Align the module with both sets of rails located on the sides of the chassis. The card requires minimal force to seat the connectors.
2. Once seated, the card's power LED lights.
3. Insert and tighten the two 3mm Phillips screws on each end of the module.



## REAR CHASSIS

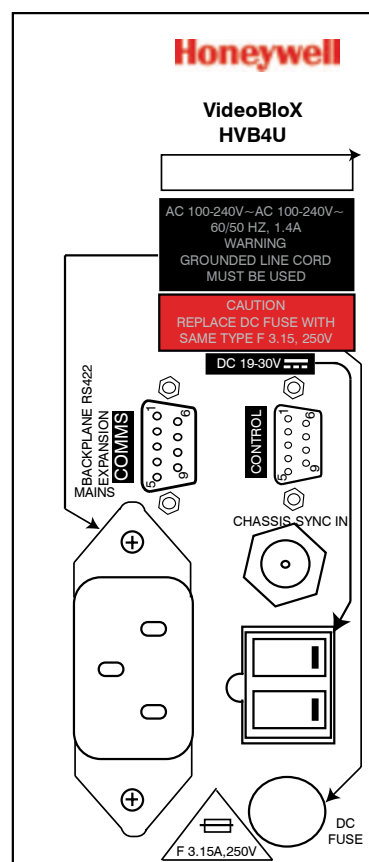
### POWER SUPPLY MODULE

#### 4U, 8U, 12U Chassis

Figure 2-1 Power Supply Module (HVB4U, HVB8U, HVB12U)

The power supply module for the 4U, 8U, and 12U chassis are the same as shown in the illustration to the right for the HVB4U. The power supply module converts the main input power to an unregulated low voltage DC supply. There are two versions of the power supply to provide 115 VAC or 240 VAC 50 / 60 Hz. It is additionally possible to power a VideoBloX chassis from a 18 to 24 VAC or 18 to 24 VDC supply. Power indications are visible from the front of the chassis. The power supply is equipped with the necessary protection and filtering to ensure regulatory compliance. It is possible to bring backup power into a chassis so that operation is not affected by the failure of the main input power supply. The power supply module provides an unregulated DC output to the backplane and each VideoBloX module is equipped with independent voltage / current regulation circuitry. The VideoBloX power supply has adequate capacity to power all modules within a chassis and also a limited number of external control keyboards. The distance between the chassis and the external control keyboard is also a limiting factor.

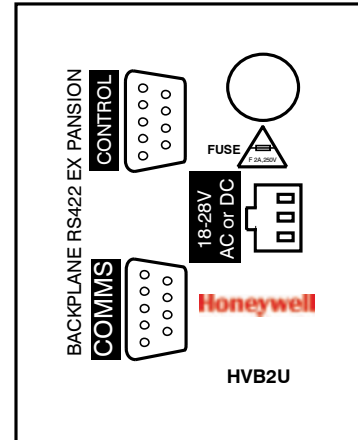
A system reset push button is accessible from the front panel after removal of a cover plate. The power supply module also incorporates communication drivers, used to interconnect multiple subracks for assembly of large matrices.



## 2U Chassis

**Figure 2-2 Power Supply Module, HVB2U**

The power supply module for the 2U chassis provides a 3-position terminal strip for connection to 18-28 VAC or VDC.



**WARNING!** The HVB2U chassis must be powered by power supply, part number HPTV2402DWP, to be CE compliant.

**Note** The 2U Chassis (HVB2U) should be powered by 24 VAC derived from a low capacitance-coupling transformer, such as a split bobbin transformer.

## Main Input Power Connection

The main input power connection is made using a standard IEC power connector. This should be connected to the main input power supply, which may be 50 or 60 Hz. Please ensure that the mains voltage matches the voltage rating shown on the rear of the chassis. The earth connection must also be made. The mains input connector incorporates a fuse holder, which protects the main input power only. Note that the second fuse on the rear of the chassis is for the low voltage input only.

Ideally, the main input power supply should have low noise levels, minimum voltage fluctuation and be protected against power surges and lightning-induced over voltages.



---

**WARNING!** The main input power supply must be used in conjunction with an uninterruptible power supply (UPS) rated greater than 400 VA and is CE certified for system reliability. The UPS is not provided by Honeywell and is the responsibility of the installer.

---

Note that the chassis may alternatively be powered via the low voltage AC / DC connector (see paragraph, Low Voltage Input Connection). It is possible to connect both the main input power supply and the low voltage supply to ensure continuous system operation in the event of failure of one of the power sources.

## Low Voltage Input Connection

This may be connected to a low voltage supply of 19-30 VDC. This power input is protected by means of the fuse, which is located adjacent to the power connector.

Note that the chassis may alternatively be powered via the main input power connector). It is possible to connect both the main input power supply and the low voltage supply, to ensure continuous system operation in the event of failure of one of the power sources.

## Chassis Sync In

Optionally connect the master video synchronization source to this BNC connector. This allows for all video switching to take place during the vertical sync of the master video source.

---

**Note** Video switching may also be synchronized to the mains input or the sync signal on the "Control" connector.

---

Please refer to **DIP SWITCH SETTINGS** in this section for further information on configuration relating to the sync input.

---

## CHASSIS EXPANSION DRIVER BOARD, HVBCE

---

This PCB plugs in to the power supply module. This board contains the drivers and receivers which are necessary to interconnect master / slave chassis together. This is required when one or more slave chassis are connected to a master chassis. For a system which uses only one chassis, this board is not required.

### Installation Procedure:

1. Remove power from chassis.
2. Remove 2X fixing screws which secure the power supply module to the front panel.
3. Remove power supply module from chassis.
4. Line up dual row connector on power supply board with expansion driver board.
5. Carefully press board into place.
6. Fasten board in place with 2 X M3 mounting screws.
7. Insert power supply into chassis, carefully lining up with the chassis connector. Press all the way in.
8. Refasten using 2X fixing screws from Step 2.

## Control Expansion Connector

This female DB9 connector allows for connection of RS422 control signals between multiple VideoBloX chassis. The pin-out of this connector is automatically modified depending on the configuration of the chassis being a master or slave. Refer to *DIP SWITCH SETTINGS* in this section for configuring the chassis as a master or slave. Generally, this connector may be wired pin to pin between one master and multiple slave chassis.

## Communications Expansion Connector

This female DB9 connector allows for connection of RS422 serial communications signals between multiple VideoBloX chassis.

The pin-out of this connector is automatically modified depending on configuration for the chassis being a master or slave. Refer to *Control Expansion and Communication Connector Pin-Outs* for master and slave pin-outs. Generally, this connector may be wired pin-to-pin between one master and multiple slave chassis. Refer to *DIP SWITCH SETTINGS* for configuring the chassis as a master or slave.



## Control Expansion and Communication Connector Pin-Outs

Throughout the VideoBloX range of products, a common pin-out scheme is used. The communication ports are referred to as Master or Slave, RS422 or RS232. The rear chassis Control and Comm connectors are RS422 connections. Refer to *DIP SWITCH SETTINGS* below for configuring the chassis as master or slave.

**Table 2-1      Connector Pin-Outs, Female DB9**

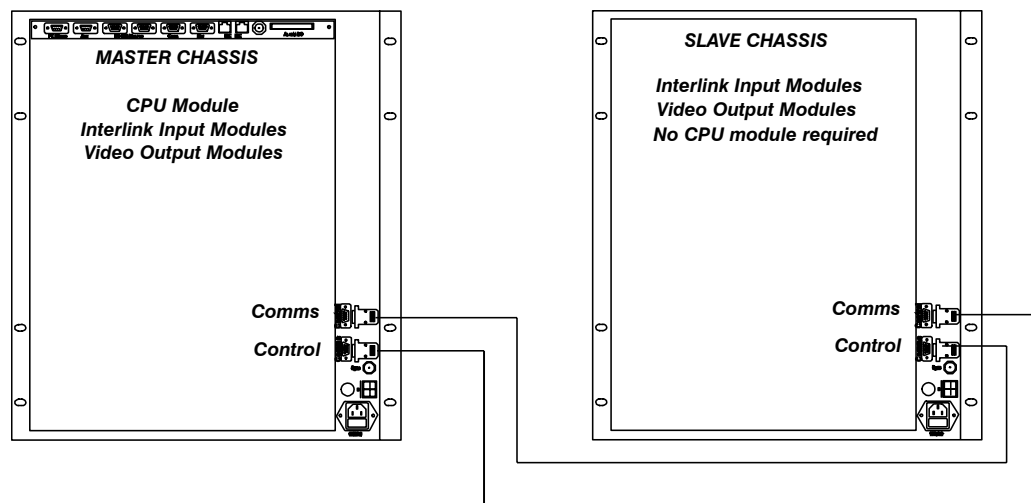
<b>Master RS422</b>	<b>Slave RS422</b>
Pin 1, TX -	Pin 1, RX-
Pin 2, TX+	Pin 2, RX+
Pin 3, RX+	Pin 3, TX+
Pin 4, RX -	Pin 4, TX-
Pin 5, Ground	Pin 5, Ground
Pin 6, 24 VDC	Pin 6, 24 VDC
Pin 9, Ground	Pin 9, Ground

## CONNECTING MULTIPLE CHASSIS

### Two Chassis

Using straight through cables with Female DB9 connectors on each end, connect the Control Connector to the Comms connector on both chassis.

**Figure 2-3 Connecting Communication Signals between Two Chassis**

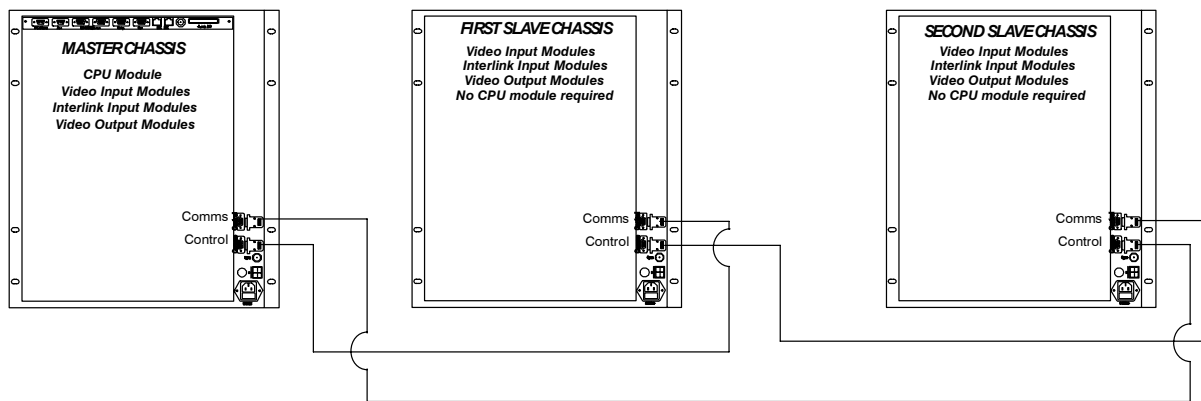


## Three Chassis

Using straight through cables with Female DB9 connectors on each end

1. Connect the Control Connector on the first (master) chassis to the Comms connector on the second chassis (first slave chassis).
2. Connect the Control Connector on the second chassis (first slave chassis) to the Comms connector on the third chassis (second slave chassis).
3. Connect the Control Connector on the third chassis (second slave chassis) to the Comms connector on the first chassis (master chassis).

**Figure 2-4 Connecting Communication Signals between Three Chassis**



## DIP SWITCH SETTINGS

**Figure 2-5 Chassis DIP Switch Settings**

Various parameters which are common to the entire chassis are configured by means of the 4-way DIP switch as per the following tables:

**Table 2-2 DIP Switch Settings**

Backplane Baud Rate	Switch 2	Switch 1
9600 Baud	Off	Off
19.2 KB (Default)	Off	On
57.6 KB	On	Off
115.2 KB	On	On



When multiple VideoBloX chassis are interconnected, use switch 4 to set the chassis, which contains the CPU card, to be the master. All other chassis must be set up as slaves.

Use switch 3 to determine which chassis generates / receives the system synchronization signal. This signal is used to synchronize video matrix switch operations to occur during the vertical synchronization period of the video signals.

**Table 2-3 Chassis Sync Signal**

Switch Position	Off	On
3	Chassis generates system sync signal	Chassis receives system sync signal
4	Chassis is a master	Chassis is a slave

---

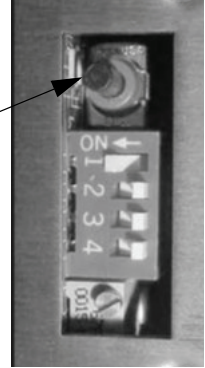
## RESET PUSH BUTTON

---

**Figure 2-6 System Reset Push Button**

When this button is pressed, the chassis will be reset. Should the chassis be configured as a master, then all slave chassis will also receive a reset signal.

Black Reset  
Push  
Button



---

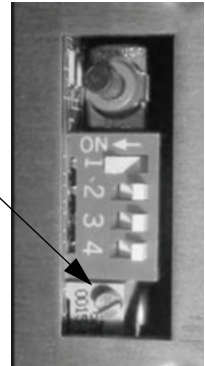
## SYNC PHASE ADJUSTMENT

---

**Figure 2-7 Sync Phase Adjustment**

This adjustment determines the sync phase with respect to the mains waveform. When sync is received via the rear panel "Chassis Sync In" BNC or via the "Control" connector, this adjustment will have no effect.

Sync Phase  
Adjustment



---

## LED INDICATIONS

---

The following table describes the function of each LED on the front panel of the power supply module.

**Table 2-4      LED Indicators**

LED Name	Description
Tx Data	Flashes on when there is data present on the backplane transmit data line
Rx Data	Flashes on when there is data present on the backplane receive data line
RTS	Flashes on when the chassis is transmitting data
Video Sync	On when sync input is present
Reset	On when the reset signal on the backplane is active

## VIDEO INPUT MODULES

---

### DESCRIPTION

---

The video input module brings 16 video signals into the VideoBloX chassis. Each of the inputs may be routed to 1 or more of the 64 backplane channels. All input modules have 16 video inputs, but can be switched to 16, 32, or 64 (maximum) outputs. Older modules have front panel termination switches and some have internal termination jumpers.

VideoBloX input modules are equipped with:

- Their own CPU, switching voltage regulator, and fuse.
- Older styles have front panel mounted termination switches
- Newer styles have an internal termination switch located on the front edge of the PCB.
- Front panel accessible gain adjustment (0 to 6db) for each input. This is useful to restore picture levels for long video runs. Typically a poor signal results in jumping or tearing text. Adjusting this potentiometer can eliminate the jumping text. This adjustment can also be useful when the outputs feed a DVR as DVRs are more susceptible to low video levels.
- Internal jumper selectable high frequency compensation to restore lost high frequency signals on long video runs.
- Video Loss detection. Allows triggering of a sequence based on video loss and / or video restored.
- Limited protection against over-voltages, such as those induced by a nearby lightning strike.
- The front panel LED illuminates for power and flicker off briefly when a valid command is sent with the card's address.

Table 3-1 Video Input Modules (Single Chassis)

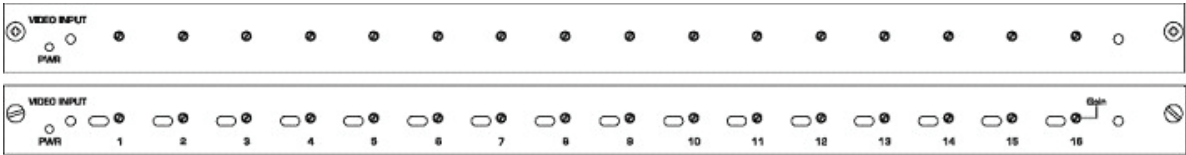
Video Input Module	Description
HVB16M16	16 Inputs switch to 16 Outputs
HVB16M32	16 Inputs switch to 32 Outputs
HVB16M64	16 Inputs switch to 64 Outputs

The boards are identified by the quantity of analog switching array ICs, MT8816AP (8x16 switch array). The HVB16M16 has 2 ICs, the HVB16M32 has 4 ICs, and the HVB16M64 has 8 ICs.



**Caution** The video input module must match the number of video outputs required. That is, a system with an HVB16M16 (16 video outputs) cannot later be increased to a 32-output matrix unless the video input card is replaced with an HVB16M32 (32 video outputs) module.

Figure 3-1 Video Input Modules (2 front panel options)

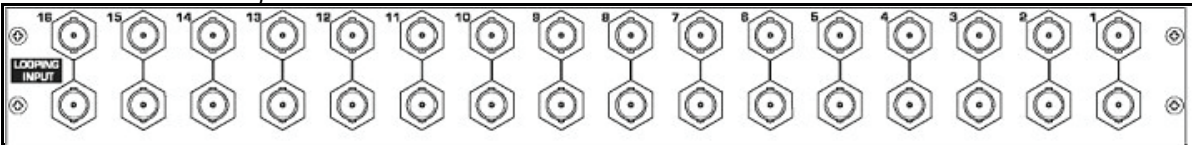


There are a number of rear panel termination options:

Figure 3-2 Video Input Module (Standard - 16 BNC Inputs)



Figure 3-3 Video Input Module (Looping BNC Inputs)





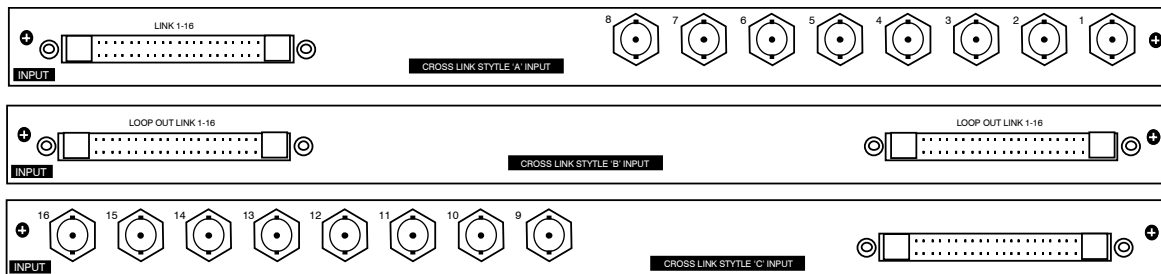
The looping card allows for looping of video inputs to another matrix switcher chassis or to an external video device, such as a VCR, DVR or multiplexer. Note that if a looping termination card is installed, a blank cover plate will be needed above the input card on the front of the chassis.

Different rear terminations can be used with each input card to alter the connection method to the chassis or card. The standard video input is connected by means of a BNC connector mounted on the rear termination panel.

## CROSS LINK VIDEO INPUT MODULES

When a system requires more than 64 video outputs (the maximum allowed in a single rack), cross-looping input rear termination modules may be used. These modules allow for a cross-connection of 8 video inputs from each of the style 'A' and 'C' modules. When connected using coaxial ribbon cables, each chassis receives all 16 video inputs. The 'B' style cross-connection module allows for interconnection of up to 4 VideoBloX chassis.

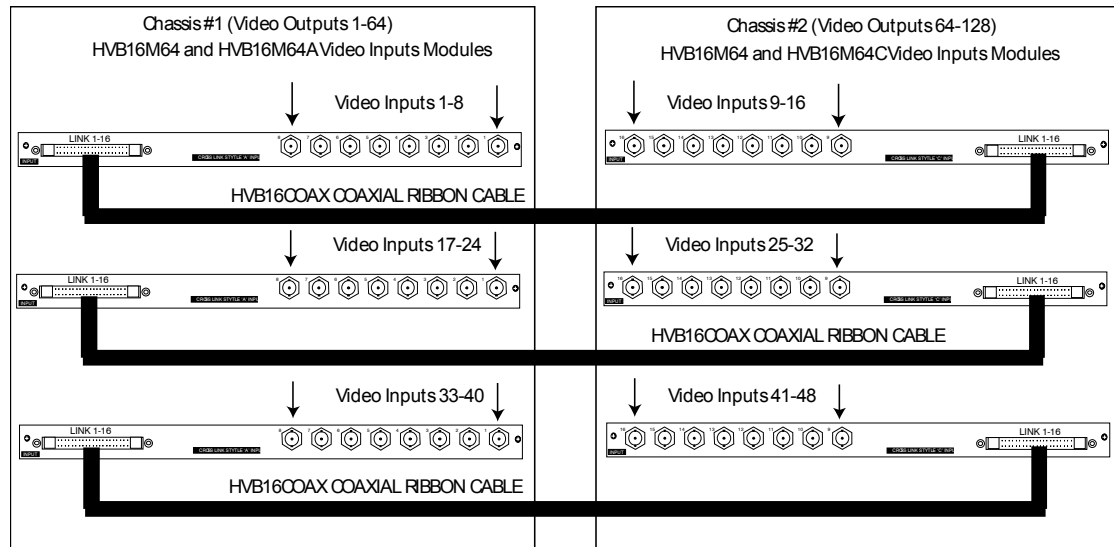
**Figure 3-4 Type A, B and C Cross-Link Looping Input Termination Modules**



The following drawings show examples of how the Cross-Link Video Input Modules are installed when more than 64 video outputs are required.

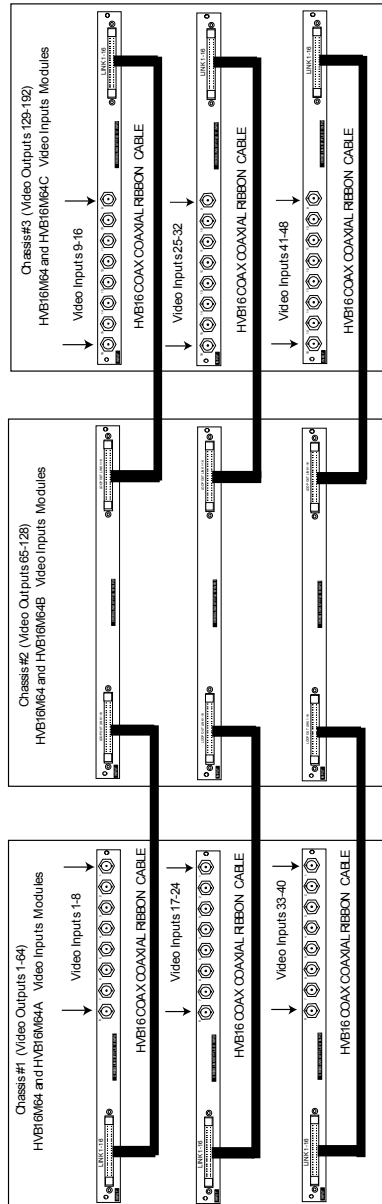
## VideoBloX Switching System with 128 Video Outputs (2 chassis)

Figure 3-5 VideoBloX Matrix Switcher with 128 Video Outputs (2 Chassis)



## VideoBloX Switching System with 192 Video Outputs (3 Chassis)

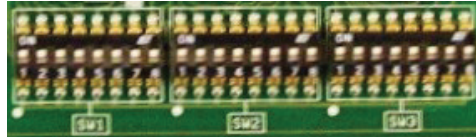
Figure 3-6 VideoBloX Matrix Switcher with 192 Video Outputs (3 Chassis)



## DIP SWITCH SETTINGS

Dependant on the style of input module, DIP switches will be as per one of the following diagrams. Note that the address is set in binary. For more information, please refer to Appendix A.

**Figure 3-7 DIP Switches SW1 - SW3**



## HVB16M16

Tables 5-2 and 5-3 show the DIP switch (SW1 and SW2) settings for the HVB16M16.

**Table 3-2 HVB16M16 DIP Switch SW1 Settings**

Switch	Function	
SW1.1	A0	Input Address
SW1.2	A1	
SW1.3	A2	
SW1.4	A3	
SW1.5	A4	
SW1.6	A5	
SW1.7	A6	
SW1.8	A7	

**Table 3-3 HVB16M16 DIP Switch SW2 Settings**

Switch	Function	
SW2.1	A0	Input Group
SW2.2	A1	Address
SW2.3	A0	Output Group
SW2.4	A1	Address
SW2.5	On	Switch 1 to 1

**Table 3-3 HVB16M16 DIP Switch SW2 Settings**

Switch	Function	
SW2.6	On	Mute Reply
SW2.7	On	Protocol B
SW2.8	On	CH1 to Sync

- DIP Switch S1 (1-8) defines the card address in binary format and is set to represent the camera range. For example, cameras 1-16, set to 1, cameras 17-32, set to 2, etc.
- S2 (1-2) extends the input address range.
- S2 (3-4) sets the output range in binary format in groups of 64.
- S2 (5) - turn on to cause the module to automatically switch its 16 video inputs to 16 video outputs on power up. In this mode, the address switch determines which group of outputs will be used. This allows for using the modules to make large VDAs, without the need for a CPU.
- S2 (6) - turn on to cause the module to work transparently as a slave to another input module. In this mode, the module does not reply to CPU messages. In this mode, it is possible to have 3 similar matrix switchers, switching RGB video.
- S2 (7) - not used. Reserved for future use.
- S2 (8) - allows channel 1 to be used for synchronization (e.g. 2U chassis with DC power).

## HVB16M32 and HVB16M64

Tables 5-4, 5-5, and 5-6 show the DIP switch settings (SW1, SW2, and SW3) for the HVB16M32 and HVB16M64 modules.

**Table 3-4 HVB16M32 and HVB16M64 DIP Switch SW1 Settings**

Switch	Function	
SW1.1	A0	Input Address
SW1.2	A1	
SW1.3	A2	
SW1.4	A3	
SW1.5	A4	
SW1.6	A5	
SW1.7	A6	
SW1.8	A7	

**Table 3-5 HVB16M32 and HVB16M64 DIP Switch SW2 Settings**

Switch	Function	
SW2.1	A8	Input Address
SW2.2	A9	
SW2.3	A10	
SW2.4	B0	Output Address
SW2.5	B1	
SW2.6	B2	
SW2.7	B3	
SW2.8	B4	

**Table 3-6 HVB16M32 and HVB16M64 DIP Switch SW3 Settings**

Switch	Function	
SW3.1	P0	Protocol
SW3.2	P1	
SW3.3	ON = FUNCTION A	
SW3.4	ON = FUNCTION B	
SW3.5	ON = FUNCTION B	
SW3.6	ON = Switch 1 to 1	
SW3.7	ON = Test Mode	
SW3.8	No Function	

- DIP Switches S1 (1-8) and S2 (1-3) define the card's address in a binary format and is set to represent the camera range. For cameras 1-16 set the address to 1, cameras 17-32 set to 2, etc.
- DIP Switch S2 (4-8) sets the monitor group in binary format. Example: all off = card is in a chassis for monitors 1-64. S2, 4 on = card is in a chassis for monitors 65-128.
- DIP Switch S3 (1-2) not used, set to off.
- DIP Switch S3 (3-5) Only switch 3 has been implemented. When switch 3 is on will mute reply's back to the CPU. Used for systems that have 2 or more input cards with the same address (e.g. systems with more than 64 outputs)
- S3 (6) is used for testing to switch 16 cameras to the outputs. If the address is 1, cameras 1-16 will be switched to monitors 1-16. If the address is 2, cameras 1-16 will be switched to monitors 17-32, etc.
- S3 (7) is a test mode that will randomly switch cameras to monitors. Used by manufacturing.
- S3 (8) is not used.

---

## LED INDICATIONS

---

The LED on the front panel of the input card illuminates to show power. Each time that a serial message is received via the backplane and is addressed to the module, the LED will flash off briefly.



---

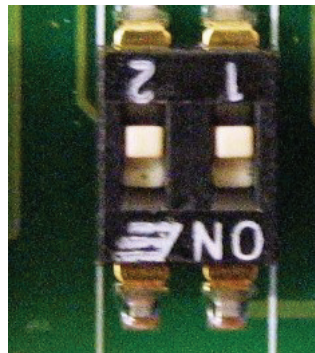
## ADJUSTMENTS

---

### Video Input Gain Setting

Each input has an adjustable gain, which is used to adjust for differing levels of the video input signal. SW2 must be set to ON to adjust the gain

**Figure 3-8** Video Input Gain Enable/Disable (SW2) and Termination (SW1).



This level should be set such that the input signal is amplified to provide 2 volts (0.6V sync and 1.4V peak white) on the backplane, when the backplane is terminated into an output card. Should the output card be calibrated, then the input may be set to provide a 1 volt (0.3V sync and 0.7V peak white) when terminated into a 75 ohm load.

**Figure 3-9 Video Gain Adjustment**



## Termination

The termination switch SW1 should be set to On (75 ohm) position unless the input is looped to other video products. Should the input be looped to another device, then ensure that the signal is terminated only at one position. The termination should always be set to on at the last video device. Refer to *Figure 3-8* for an illustration of termination switch SW1.

---

## FUSES

---

The input module has one PCB mounted fuse, rated at 4A. This fuse should only blow in the event of a fault on the board. In such an event the input module should be returned to Honeywell for repair.



## VIDEO OUTPUT MODULES

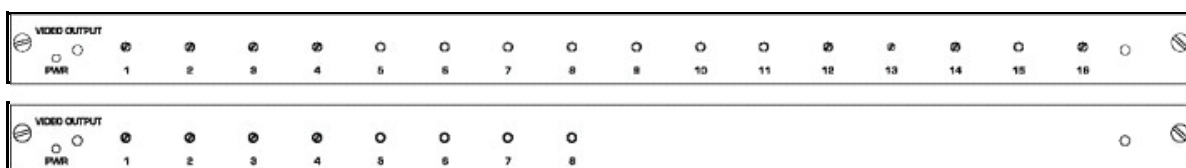
### DESCRIPTION

The video output module provides 16 video signals from the VideoBloX chassis. Each of the outputs is associated with one of the 64 backplane channels.

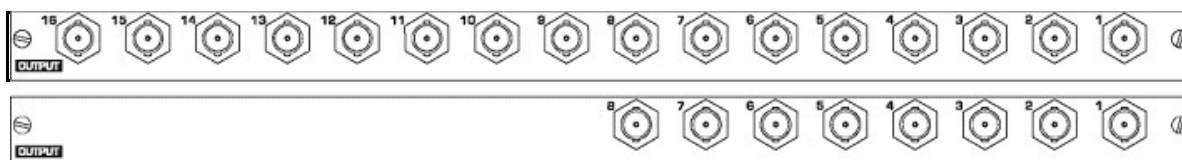
**Table 4-1 Video Output Modules**

Model	Description
HVB8O	8 Outputs
HVB16O	16 Outputs

**Figure 4-1 8 and 16 Channel Video Output Modules - Front View**



**Figure 4-2 8 and 16 Channel Video Output Rear Panel Termination Modules**



Modules are equipped with:

- Front panel accessible gain adjustment
- Limited protection against over-voltages, such as those induced by power surges and nearby lightning strikes. The output module has a range of jumpers which are populated to determine which group of 16 video outputs the module receives from the backplane.



---

**Caution** The user should not modify the jumpers. Output cards should be ordered for specific output channels.

---

---

## DIP SWITCH SETTINGS

---

Refer to *Chapter 5, TITLED VIDEO OUTPUT MODULE, DIP SWITCH SETTINGS*.

---

## VIDEO OUTPUT GAIN ADJUSTMENT

---

Refer to *Chapter 5, TITLED VIDEO OUTPUT MODULE, VIDEO OUTPUT GAIN ADJUSTMENT*.

---

## OUTPUT RANGES

---

The output cards use a daughter board to set the output range (i.e. monitor 1-16 or 17-32, etc.). Refer to the appropriate paragraph in *Chapter 5, TITLED VIDEO OUTPUT MODULE, DAUGHTER BOARD SETUP, MODULE BOARD SETTING, VIDEO OUTPUTS 1-64, MODULE BOARD SETTING, VIDEO OUTPUTS 1-16, MODULE BOARD SETTING, VIDEO OUTPUTS 17-32, MODULE BOARD SETTING, VIDEO OUTPUTS 33-48, or MODULE BOARD SETTING, VIDEO OUTPUTS 49-64*, for the desired output range and positioning of the daughter board.

## TITLED VIDEO OUTPUT MODULE

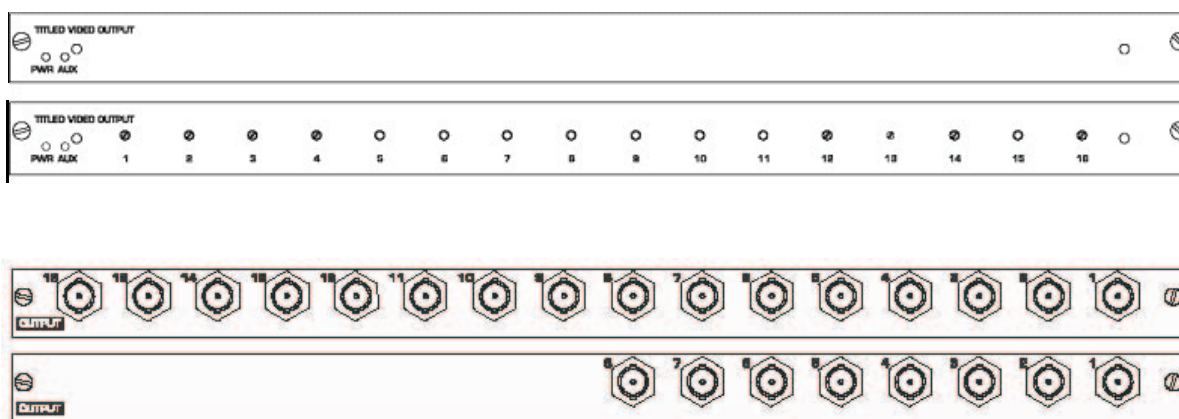
### DESCRIPTION

The titled video output module provides 16 titled video signals from the VideoBloX chassis. Each of the outputs is associated with one of the 64 backplane channels

**Table 5-1 Titled Video Output Modules**

Model	Description
HVB8TO	8 Titled Video Outputs
HVB16TO	16 Titled Video Outputs

**Figure 5-1 Front and Rear Views of Titled Video Output Module**



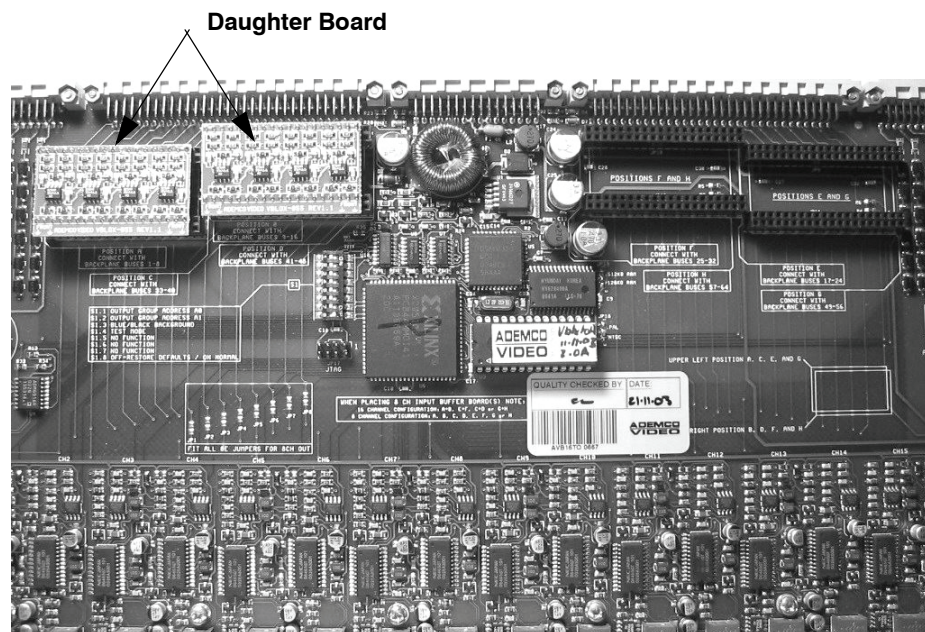
Titled Video Output Modules are equipped with:

- 24 character by 12 line text generation capability.
- Built in real time clock.
- Non-volatile RAM with Lithium battery to back up memory for storing camera titles during power down. The camera titles are stored on the output card.
- Limited protection against over-voltages, such as those induced by a nearby lightning strike.

## DIP SWITCH SETTINGS

The video output cards use a daughter board to set the output range (i.e. monitor 1-16 or 17-32, etc.).

**Figure 5-2 Location of Video Output Daughter Board**



Refer to the appropriate paragraph below, *MODULE BOARD SETTING, VIDEO OUTPUTS 1-16*, *MODULE BOARD SETTING, VIDEO OUTPUTS 17-32*, *MODULE BOARD SETTING, VIDEO OUTPUTS 33-48*, or *MODULE BOARD SETTING, VIDEO OUTPUTS 49-64* for the required video outputs for positioning of the daughter board.

Set the Titled Output Module DIP switches as follows:

**Table 5-2      DIP Switch S1 Settings**

DIP Switch S1	Function
S1.1	Output Group Address A0
S1.2	Output Group Address A1
S1.3	Blue/Black Background
S1.4	Test Mode
S1.5	No Function
S1.6	No Function
S1.7	No Function
S1.8	Off=Restore Defaults On=Normal

- S1 (1-2) set the Monitor Group for that output card (e.g. if the card is located in the Monitor group (chassis) of outputs 1-64 then set S1-1 Off and S1-2 Off. If the Monitor Group is 65-128 then set S1-1 On and S1-2 Off and so on in binary count.
- S1 (3) sets the no video screen to blue or black.
- S1 (4) places the card in test mode and displays diagnostic info on the output.
- S1 (5-7) are not used.
- S1 (8) Restores the defaults (clears all titles).

---

## VIDEO OUTPUT GAIN ADJUSTMENT

---

The default for the output level adjustment is to provide an overall normalized system gain. To set the system for normalized gain, first adjust the input gain as described in [Chapter 3, VIDEO INPUT MODULES, Video Input Gain Setting](#). Then with the output terminated into 75 ohms, adjust the rear panel gain so that the output signal level is the same as the input signal level. Normally either of the methods described could be used. Should it be required to generate a non-standard video signal level, such as boosting the signal to compensate for long cable runs, adjust the gain in order to achieve the desired output signal once the input gain has been adjusted as described.

---

## RESTORING FACTORY DEFAULTS

---

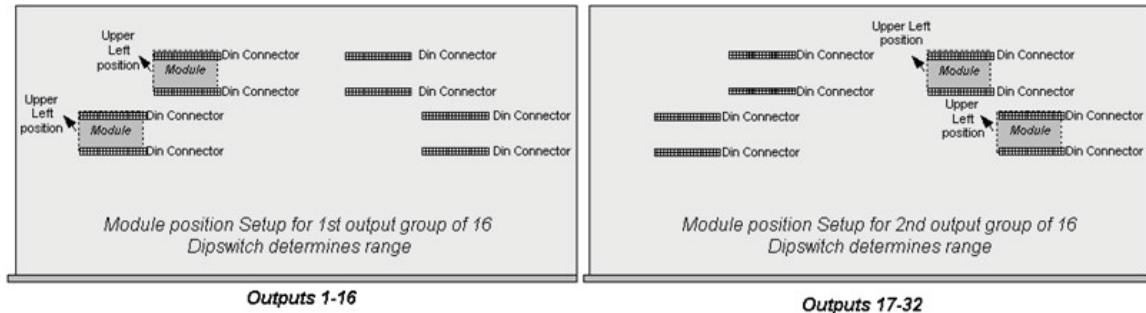
With the output module out of the chassis and disconnected from power,

1. Place DIP switch S1-8 in the Off position.
2. Leave it in the Off position for 10 seconds. This clears the non-volatile memory of the Titled Output module.
3. Return the switch to the ON position.
4. Reinstall the module in chassis. When power is applied to the module, the module defaults to a diagnostic mode and initializes defaults.
5. Perform one of the following to clear the diagnostics:
  - Once again, remove the module from the chassis and reinstall it,
  - Remove power to the chassis and then power it back up while the module is seated or,
  - Press the black reset button on the power module cover while the module is seated

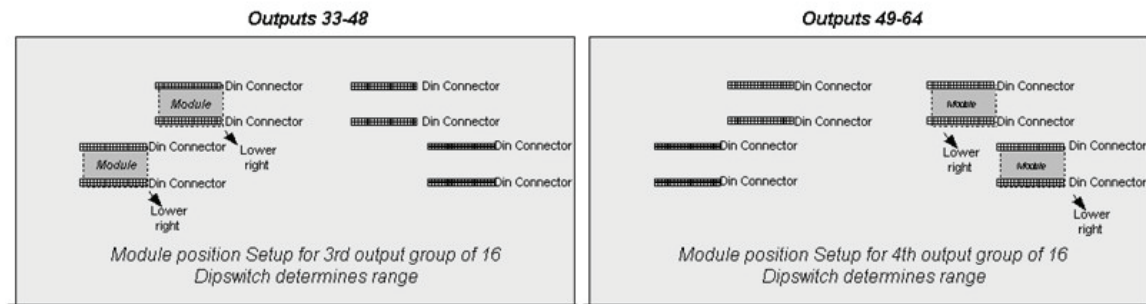
When power is reapplied to the module, the diagnostic mode is cleared.

## DAUGHTER BOARD SETUP

### MODULE BOARD SETTING, VIDEO OUTPUTS 1-64

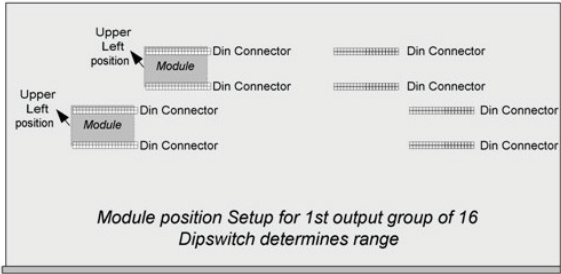


*Typical for Module positions for outputs 1-64*

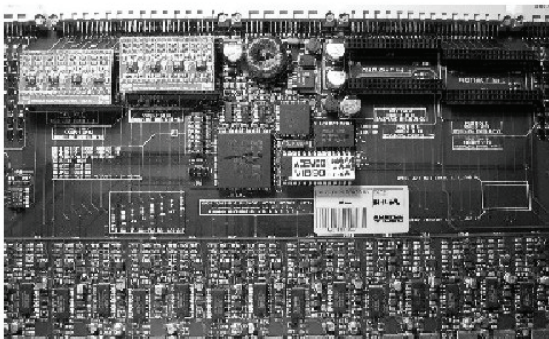
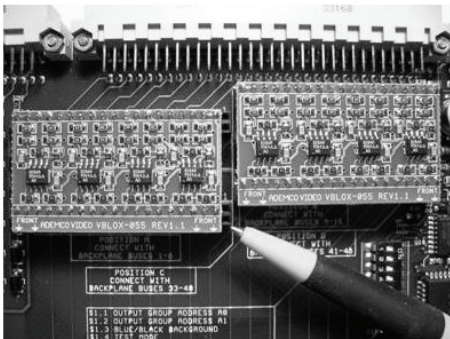




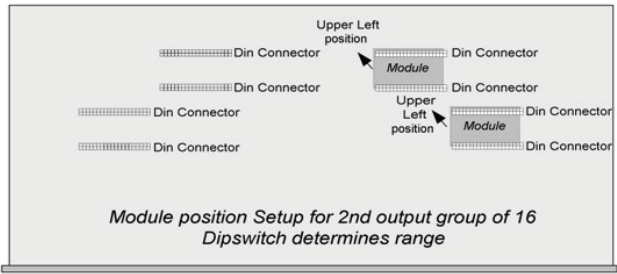
MODULE BOARD SETTING, VIDEO OUTPUTS 1-16



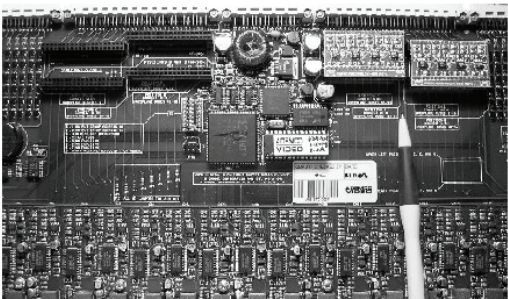
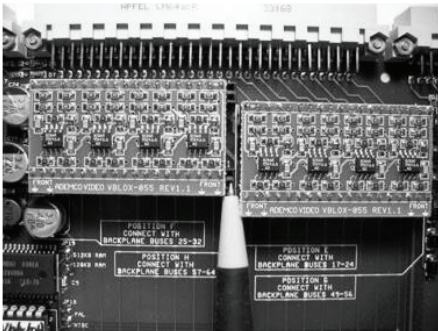
Outputs 1-16



MODULE BOARD SETTING, VIDEO OUTPUTS 17-32

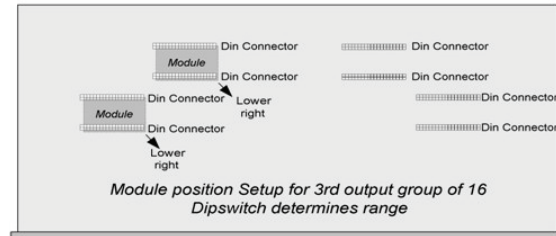


Outputs 17-32

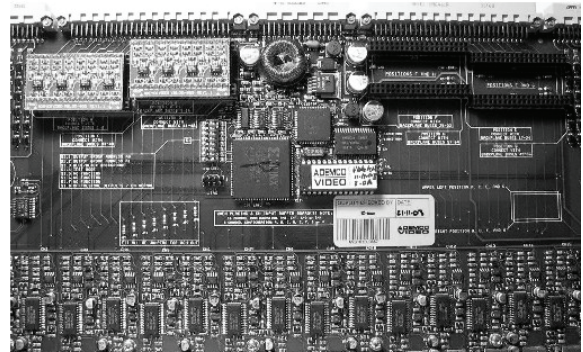
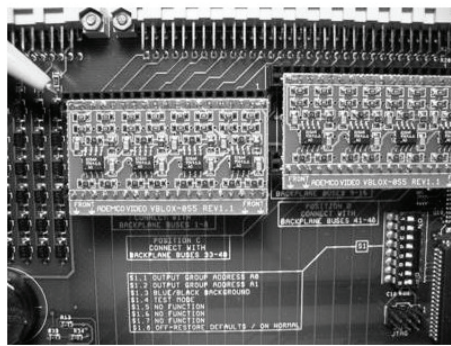




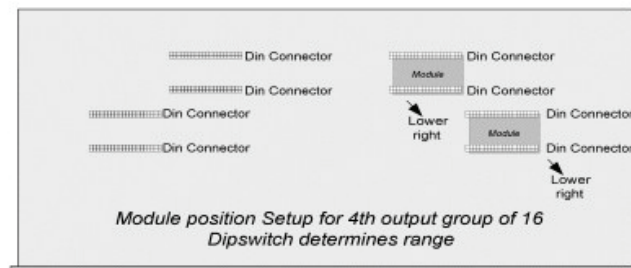
## MODULE BOARD SETTING, VIDEO OUTPUTS 33-48



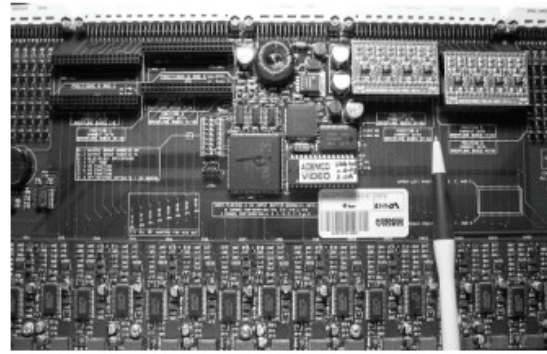
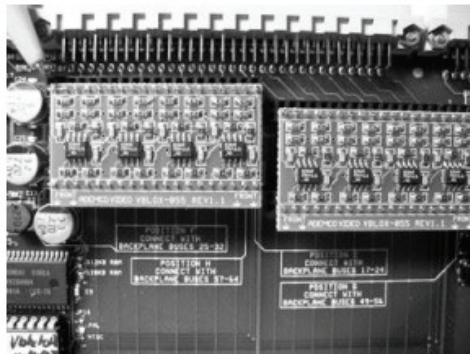
Outputs 33-48



## MODULE BOARD SETTING, VIDEO OUTPUTS 49-64



Outputs 49-64





## AUDIO INPUT MODULE

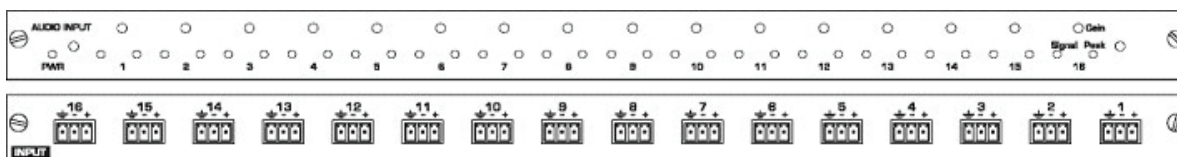
---

### DESCRIPTION

---

The audio input module brings 16 balanced audio signals into the VideoBloX chassis. Each of the inputs may be routed to 1 or more of the 64 backplane channels.

**Figure 6-1 Front and Rear Views of Audio Input Module**



VideoBloX audio input modules are equipped with:

- Balanced input capability
- Front panel accessible gain adjustment
- Front panel signal present and overload (peak) indications
- Phantom powering option
- 20 dB pad to cater for a wide range of input signal levels.
- High pass and low pass filter options

## DIP SWITCH SETTINGS

Set the Audio Input Module DIP switches as follows:

**Table 6-1      DIP Switch S1 Settings**

DIP Switch S1	Function
1	A0 Board Address
2	A1 Board Address
3	A2 Board Address
4	A3 Board Address
5	A4 Board Address
6	A5 Board Address
7	A6 Board Address
8	A7 Board Address

- S1 (1-8) sets the module address. This must be non-zero. A value of 1 addresses the card to accept audio inputs 1 to 16, etc.

**Table 6-2      DIP Switch S2 Settings**

DIP Switch S2	Function
1	Off = Output 1-64 / On = Output 65-128
2	Off = Normal / On = Review/Stereo
3	Off = Normal / On = Route 1 to 1
4	Off = Normal / On = Test Mode

- S2 (1) Turn on to associate the module with output channels 65 to 128.
- S2/2 Turn on to cause the module to work transparently as a slave to another input module. This mode allows two cards to work synchronously for switching stereo signals.
- S2/3 Turn on to cause the module to automatically switch its 16 audio inputs to 16 audio outputs on power up. In this mode, the address switch determines which group of outputs will be used.
- S2/4 Turn on to cause the module to enter test mode. In this mode, the module rapidly cycles various inputs to outputs. This is useful for bench-top faultfinding and should not normally be used in the field.

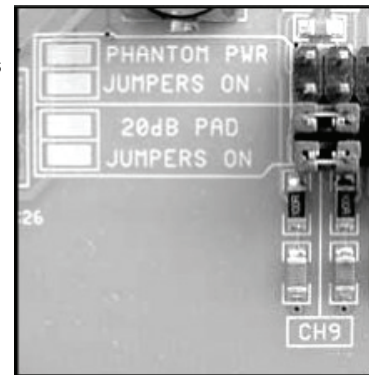
## CONFIGURATION JUMPERS

### Phantom Power Jumpers and 20dB Pad Jumpers

**Figure 6-2 Phantom Power Jumpers and 20dB Pad Jumpers**

Fit the two phantom power jumpers as per the legend shown alongside to provide phantom powering for external microphones. In all other cases, these jumpers should not be fitted.

Adding the two 20 dB pad jumpers as per the legend above reduces the gain of the audio input stage by 20 dB. This allows for high level audio inputs, such as line level signals.



### Low Pass and High Pass Filter Jumpers

**Figure 6-3 Low Pass and High Pass Filter Jumpers**

Place the jumper in the position shown as "Hi Filter On" to enable the high pass filter function. This reduces the level of signals below 300 Hz

Place the jumper in the position shown as "Low Filter On" to enable the low pass filter function. This reduces the level of signals above 6000 Hz



---

## ADJUSTMENTS

---

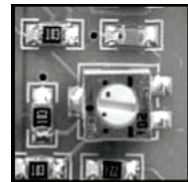
### Gain Adjustment

Adjust the front panel gain control to an optimum level for the input source for each channel. This level will result in a bright LED indication for "Signal", with only occasional flashes of the "Peak" LED when the input signal is at the maximum expected level.

### CMRR Adjustment

**Figure 6-4 CMRR Adjustment**

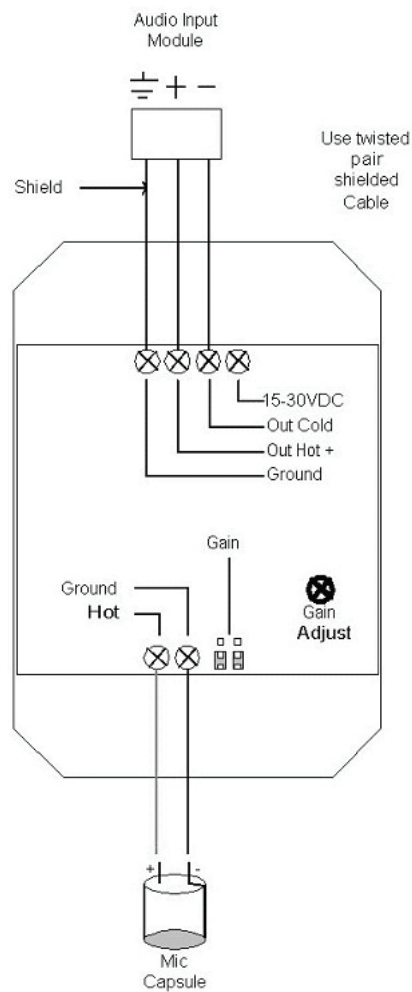
This adjustment sets the common mode rejection for the balanced inputs. It is factory calibrated and should not be adjusted by the user. The optimum level is that where a minimum output signal is obtained when both + and - input signals are driven by the identical signal (inputs shorted).



## CONNECTING A MICROPHONE TO THE AUDIO INPUT MODULE

The following diagram shows how to connect a microphone to the Audio Input Card. Set the phantom power jumpers on the audio input module as described in paragraph *Phantom Power Jumpers and 20dB Pad Jumpers*

**Figure 6-5** Connecting a Microphone to an Audio Input





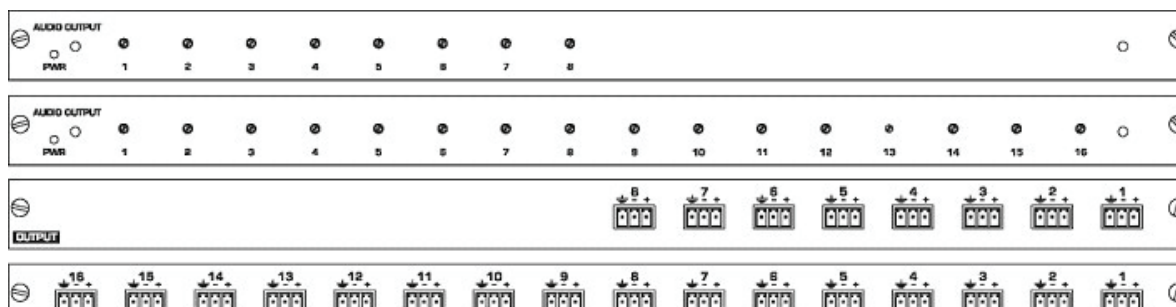


# AUDIO OUTPUT MODULE

## DESCRIPTION

The audio output module provides 16 audio output signals from the VideoBloX chassis. Each of the outputs is associated with one of the 64 backplane channels.

**Figure 7-1 Front and Rear Views of 8 and 16 Channel Audio Output Modules**



Modules are equipped with:

- Front panel accessible gain adjustment
- Balanced (differential) signal output.
- Limited protection against over-voltages, such as those induced by a nearby lightning strike.

The output module has a range of jumpers which are populated to determine which group of 16 audio outputs the module receives from the backplane.



**Caution** The user should not modify the jumpers. Output cards should be ordered for specific output channels.

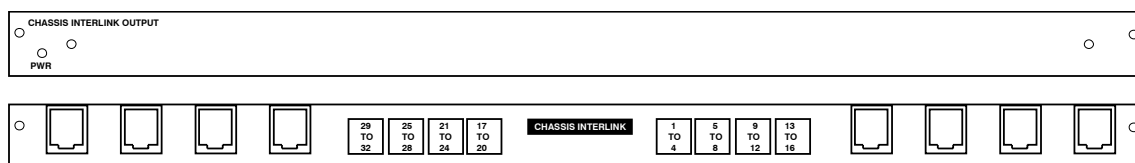


# CHASSIS INTERLINK INPUT AND OUTPUT MODULE

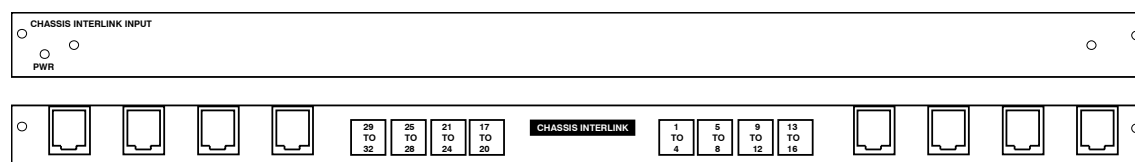
## DESCRIPTION

The Chassis Interlink Input and Output Modules allow for multiple chassis to be connected together increasing the number of inputs of a matrix switching system.

**Figure 8-1 HVB32LKO Chassis Interlink Output Module with Rear Terminal HVBRJ45X8**



**Figure 8-2 HVB32LKI Chassis Interlink Input Module with Rear Terminal HVBRJ45X8**



Input and Output Interlink modules have the following features:

- 32 input/output channels, allowing for high density interconnects.
- Balanced video driver and receivers allow high quality twisted pair connections for video.

The "Main" chassis of a matrix is that which incorporates the video output modules, which connect to video monitors. All other chassis are "Sub-Racks", which use interlink modules to connect their backplane signals to the main chassis.

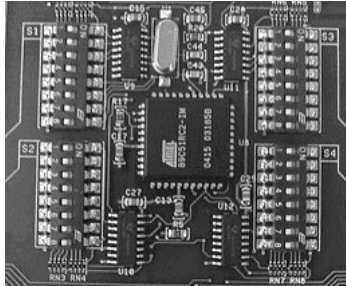
There are no adjustments / DIP switches on the interlink output module. User configurable jumpers allow this module to be available in two options, channel 1 to 32 and channel 33 to 64. Should a matrix be expanded to more than 64 outputs, these two options are still used and refer to the backplane channels within each subrack. Interlink outputs are connected to interlink inputs in the main chassis by means of cables with RJ45 connectors, each carrying 4 signals.

**Figure 8-3 Jumper JP1 - JP4 Settings**



## DIP SWITCH SETTINGS

**Figure 8-4 DIP Switch Settings**



Set the Interlink Input DIP switches as follows:

**Table 8-1 DIP Switch S1 and S2 Settings**

DIP Switch	Function	
S1.1	A0	Interlink Start Address
S1.2	A1	
S1.3	A2	
S1.4	A3	
S1.5	A4	
S1.6	A5	
S1.7	A6	
S1.8	A7	
S2.1	A8	Output Address
S2.2	A9	
S2.3	A10	
S2.4	B0	
S2.5	B1	
S2.6	B2	
S2.7	B3	
S2.8	B4	

- Set the "Start Address" SW1 (1-8) and SW2 (1-3) to match the address of the first input card within the connected sub-chassis.
- Set S2 (4-8) to determine which group of 64 output signals this module will control. For monitors 1-64, SW2/4 - SW2/8 should be set to 00000; for monitors 65-128 SW2/4 - SW2/8 should be set to 00001.

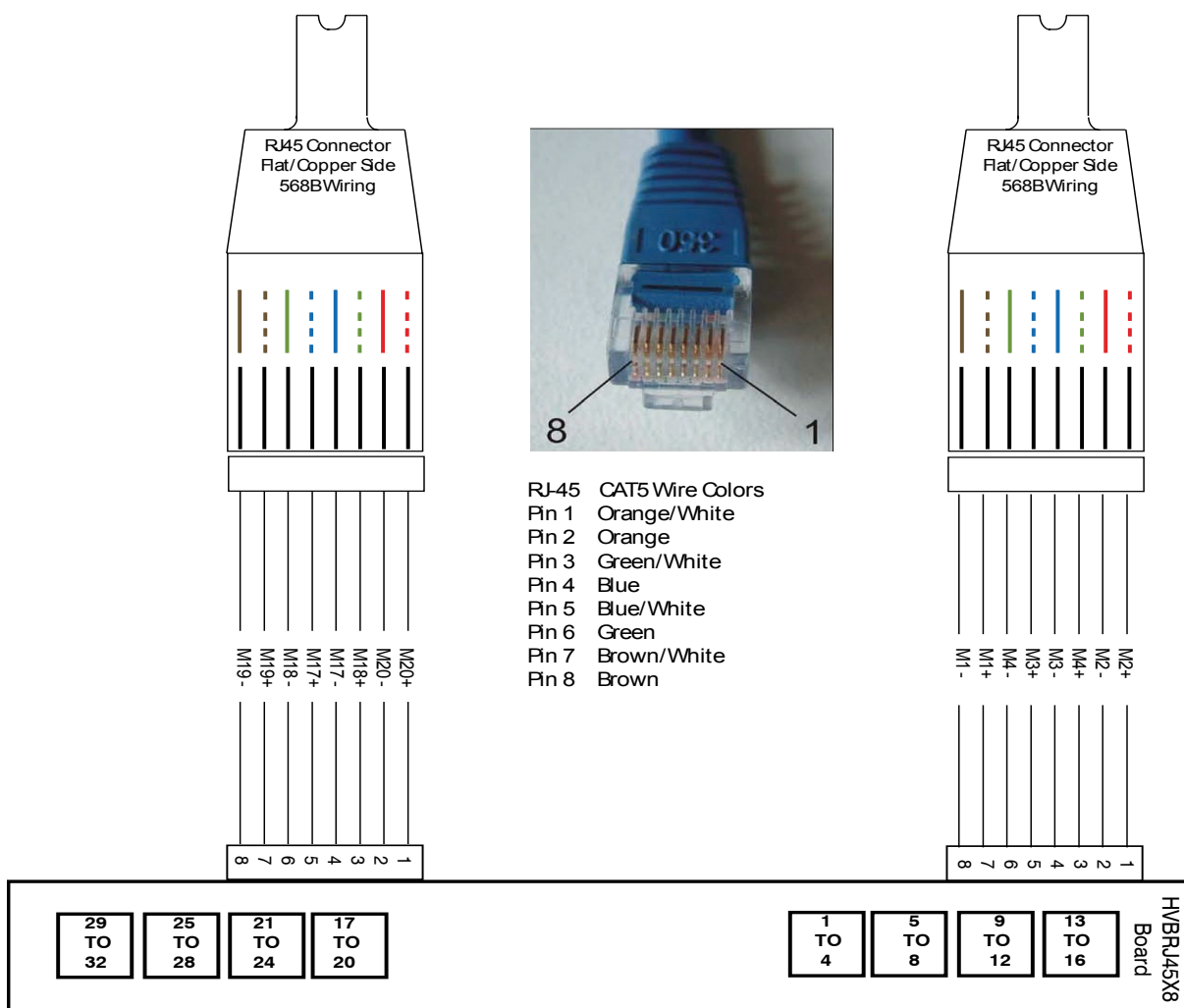
**Table 8-2      DIP Switch S3 and S4 Settings**

DIP Switch	Function	
S3.1	A0	Interlink End Address
S3.2	A1	
S3.3	A2	
S3.4	A3	
S3.5	A4	
S3.6	A5	
S3.7	A6	
S3.8	A7	
S4.1	A8	
S4.2	A9	
S4.3	A10	
S4.4	P0	Protocol
S4.5	P1	
S4.6	Off = Normal / On = Switch 1 to 1	
S4.7	Off = Normal / On = Test mode	
S4.8	Not Used	

- Set the "End Address" SW3 (1-8) and SW4 (1-3) to match the address of the last input card within the connected sub-chassis.
- SW4/4-5 are reserved for future use in selecting protocols.
- SW4 (6) is used for testing to switch inputs to the outputs, camera 1 to monitor 1, camera 2 to monitor 2, camera 15 to monitor 15, etc.
- Turn on SW4 (7) to enter test mode. In this mode, the module cycles various inputs to outputs. This is useful for bench-top fault-finding and should not normally be used in the field.
- SW4 (8) is not used.

## CONNECTIONS, HVB32RJ45X8

### Figure 8-5 RJ45 Connections







# A

## BINARY ADDRESS VALUES

Table A-1 Binary Address Values

A8	A7	A6	A5	A4	A3	A2	A1	Unit Address
Off	Off	Off	Off	Off	Off	Off	Off	0-not allowed
Off	Off	Off	Off	Off	Off	Off	On	1
Off	Off	Off	Off	Off	Off	On	Off	2
Off	Off	Off	Off	Off	Off	On	On	3
Off	Off	Off	Off	Off	On	Off	Off	4
Off	Off	Off	Off	Off	On	Off	On	5
Off	Off	Off	Off	Off	On	On	Off	6
Off	Off	Off	Off	Off	On	On	On	7



# B

## CONNECTING TO MAXPRO-Net SERVER

---

### INTRODUCTION

---

This appendix provides installation diagrams and DIP Switch settings for controlling a VideoBloX system with Redundant MAXPRO-Net Servers and a MAXPRO-Net Server without Redundancy.

Required hardware:

- PC running MAXPRO-Net software
- VideoBloX Chassis (CPU module is not required)
- VideoBloX HVBMATPIT Matrix Protocol Translator

---

### CONNECTIONS

---

Refer to Figures B-1 and B-2.

---

## DIP Switch Settings

---

### VideoBloX Chassis Power Supply Module

Set the VideoBloX Chassis as a slave chassis.

**Table B-1 VideoBloX Chassis DIP Switch S1 Settings**

Switch	Setting
1	On
2	Off
3	Off
4	On

### HVBMATPIT

Set the HVBMATPIT DIP Switches S1 - S3 as shown in Table B-2.

**Table B-2 HVBMATPIT DIP Switch S1 - S3 Settings**

S1	Setting	S2	Setting	S3	Setting
1	On	1	Off	1	Off
2	Off	2	Off	2	Off
3	Off	3	Off	3	On
4	On	4	Off	4	Off
5	Off	5	Off	5	On
6	Off	6	Off	6	Off
7	Off	7	Off	7	Off
8	Off	8	Off	8	On

---

## LED OPERATION

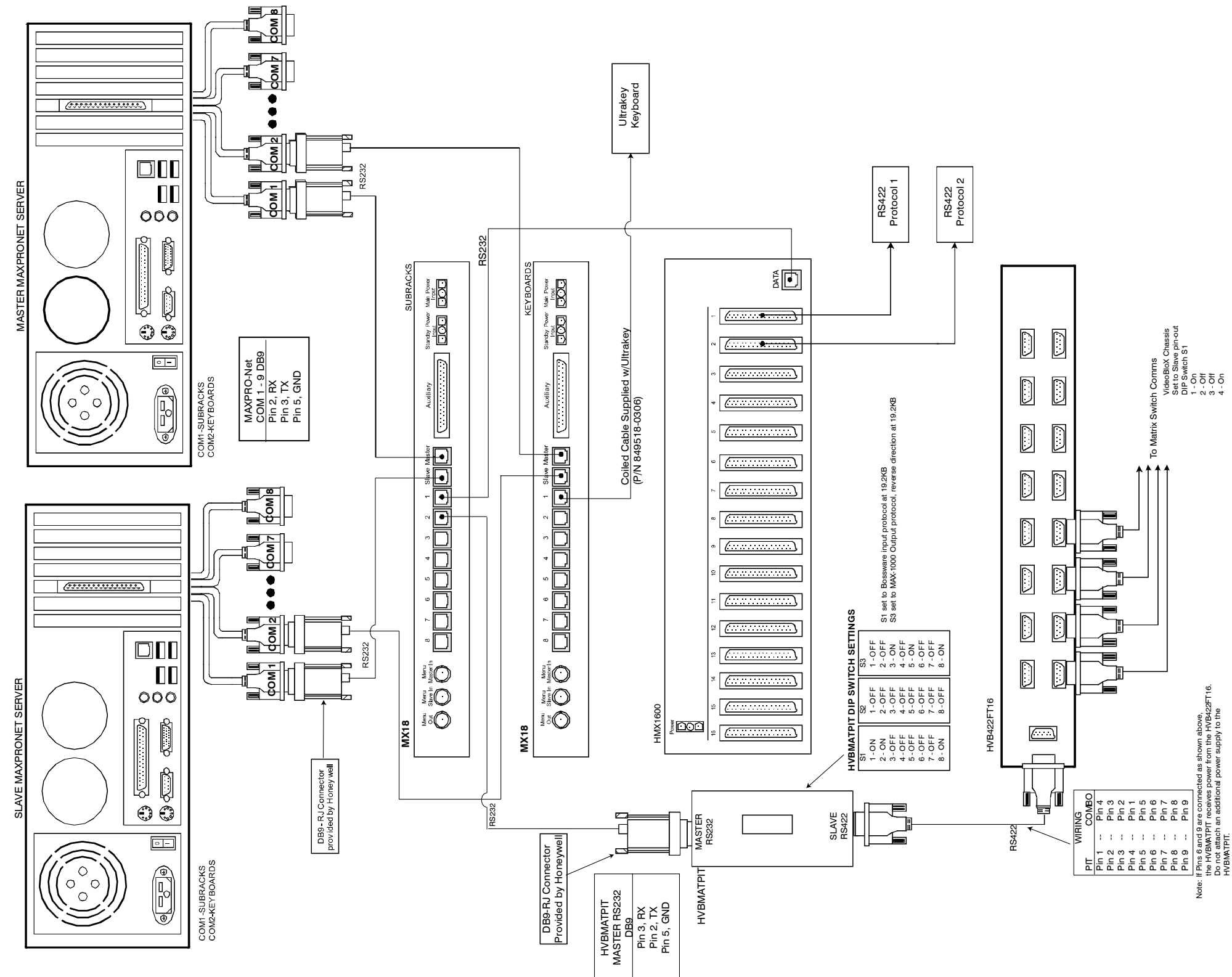
---

After completing installation;

1. Both LEDs on the HVBMATPIT should be lit solid.
2. The TX, RX and RTS data LEDs on the VideoBloX power supply module should be flashing.
3. The Video Input Card LEDs should be flashing.
4. Upon receipt of a valid command from the MAXPRO-Net PC, both yellow and green Led on the PIT should flicker.



### Figure B-1 Connecting Redundant MAXPRO-Net Servers to VideoBloX Matrix Switcher









**Honeywell Video Systems (Head Office)**

2700 Blankenbaker Pkwy, Suite 150  
Louisville, KY 40299, USA  
[www.honeywellvideo.com](http://www.honeywellvideo.com)  
☎ +1.800.796.2288

**Honeywell Security Australia Pty Ltd.**

Unit 5, Riverside Centre, 24-28 River Road West  
Parramatta, NSW 2150, Australia  
[www.ademco.com.au](http://www.ademco.com.au)  
☎ +61.2.8837.9300

**Honeywell Security Asia Pacific**

33/F Tower A, City Center, 100 Zun Yi Road  
Shanghai 200051, China  
[www.security.honeywell.com/cn](http://www.security.honeywell.com/cn)  
☎ +86 21.2527.4568

**Honeywell Security Asia**

Flat A, 16/F, CDW Building, 388 Castle Peak Road  
Tsuen Wan, N.T., Hong Kong  
[www.security.honeywell.com/hk](http://www.security.honeywell.com/hk)  
☎ +852.2405.2323

**Honeywell Security France**

Parc Gutenberg, 8, Voie La Cardon  
91120, Palaiseau, France  
[www.honeywell.com/security/fr](http://www.honeywell.com/security/fr)  
☎ +33.01.64.53.80.40

**Honeywell Security Italia SpA**

Via Treviso 2 / 4  
31020 San Vendemiano  
Treviso, Italy  
[www.honeywell.com/security/it](http://www.honeywell.com/security/it)  
☎ +39.04.38.36.51

**Honeywell Security España**

Mijancas 1. 3ª Planta  
P.Ind. Las Mercedes  
28022 Madrid, Spain  
[www.security.honeywell.com/es](http://www.security.honeywell.com/es)  
☎ +34.902. 667.800

**Honeywell Video Systems Northern Europe**

Netwerk 121  
1446 WV Purmerend, The Netherlands  
[www.SecurityHouse.nl](http://www.SecurityHouse.nl)  
☎ +31.299.410.200

**Honeywell Video Systems UK Ltd.**

Aston Fields Road, Whitehouse Ind Est  
Runcorn, Cheshire, WA7 3DL, UK  
[www.honeywellvideo.com](http://www.honeywellvideo.com)  
☎ +0844 8000 235

**Honeywell Security South Africa**

Unit 6 Galaxy Park, 17 Galaxy Avenue  
Linbro Park, P.O. Box 59904  
2100 Kengray, Johannesburg, South Africa  
[www.honeywell.co.za](http://www.honeywell.co.za)  
☎ +27.11.574.2500

**Honeywell Security Deutschland**

Johannes-Mauthe-Straße 14  
D-72458 Albstadt, Germany  
[www.honeywell.com/security/de](http://www.honeywell.com/security/de)  
☎ +49.74 31.8 01.0

**Honeywell Security Poland**

Chmielewskiego 22a, 70-028  
Szczecin, Polska  
[www.ultrak.pl](http://www.ultrak.pl)  
☎ +48.91.485.40.60

**Honeywell Security Czech Republic**

Havránkova 33, Brno  
Dolní Heršpice, 619 00, Czech Republic  
[www.olympo.cz](http://www.olympo.cz)  
☎ +420.543.558.111

**Honeywell Security Slovakia Republic**

Vajnorská 142, 83104 Bratislava  
Slovakia  
[www.olympo.sk](http://www.olympo.sk)  
☎ +421.2.444.54.660

# Honeywell

[www.honeywellvideo.com](http://www.honeywellvideo.com)  
+1.800.796.CCTV (North America only)  
[HVSsupport@honeywell.com](mailto:HVSsupport@honeywell.com)

Document 900.0855 10/06 Rev 1.00

© 2006 Honeywell International Inc. All rights reserved. No part of this publication may be reproduced by any means without written permission from Honeywell Video Systems. The information in this publication is believed to be accurate in all respects. However, Honeywell Video Systems cannot assume responsibility for any consequences resulting from the use thereof. The information contained herein is subject to change without notice. Revisions or new editions to this publication may be issued to incorporate such changes.